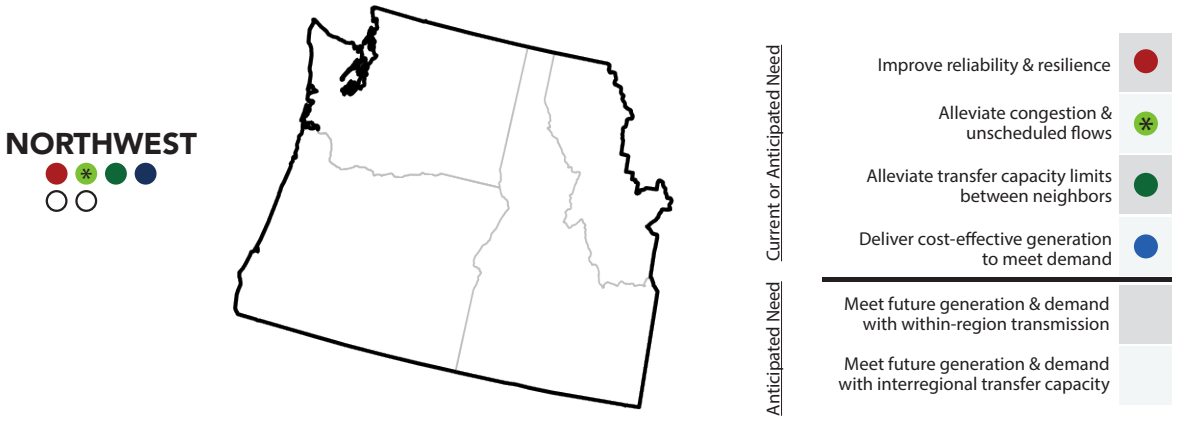
GRID DEPLOYMENT OFFICE

FACT SHEET

2023 NATIONAL TRANSMISSION NEEDS STUDY

NORTHWEST REGION

The U.S. Department of Energy's Grid Deployment Office (GDO) released the National Transmission Needs Study ("Needs Study") in October 2023. The Needs Study is the Department's **triennial state of the grid** report. The Needs Study identifies transmission needs and provides information about current and anticipated future capacity constraints and congestion on the Nation's electric transmission grid. In this fact sheet, we highlight the transmission needs of the Northwest region. The Needs Study provides further detail on the benefits of transmission that could be realized throughout the country.



**Wholesale market price data is limited for non-RTO/ISO regions. Absence of data does not necessarily indicate that there is no need for transmission to alleviate congestion and/or unscheduled flows in non-RTO/ISO regions.*

FINDINGS OF TRANSMISSION NEED IN THE NORTHWEST REGION

› **Improve reliability and resilience.** The Northwest faces risk of load curtailment during extreme weather events and wildfires, particularly as the region becomes increasingly reliant on variable energy resources to meet peak demand. Additional transmission upgrades would reduce risks to electricity reliability from extreme events.

› **Alleviate congestion and unscheduled flows.** Unscheduled flows persist on Qualified Path 66 located at the intersection of the Northwest, California, and Mountain regions and high congestion values exist within the Northwest region. Additional transmission deployment would help alleviate these needs.

› **Alleviate transfer capacity limits between the Northwest and Mountain regions.** High congestion value of interregional transmission from 2012–2020 exists between the Northwest and the Mountain region, with an average marginal value of transmission equal to $14/MWh. A high congestion value indicates that increased transmission between the regions would reduce system congestion and constraints.

› **Deliver cost-effective generation to meet demand.** The Northwest is anticipated to integrate higher levels of new generation to meet state-level power sector emissions reduction targets. Additional interregional transmission would allow for an increase of cost-effective, out-of-state clean energy imports, as well as the export of low-cost clean energy from the Northwest region to other western states.

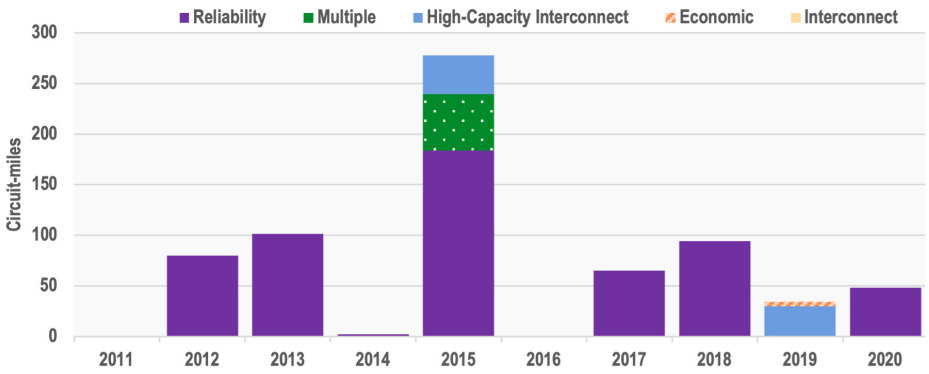
HELPFUL LINKS

› **Read the full study at www.energy.gov/gdo/national-transmission-needs-study**

› **Contact GDO with additional questions: transmission@hq.doe.gov**

FINDINGS AT A GLANCE

Circuit-miles of new or rebuilt transmission lines (≥100kV) energized between 2011–2020 by project driver.

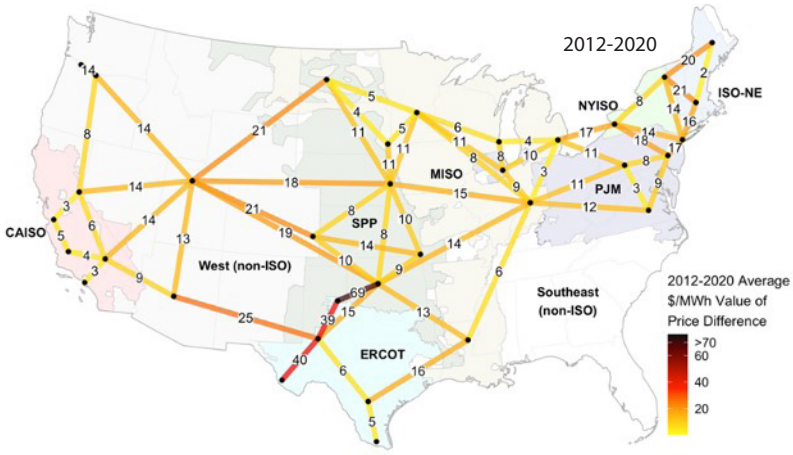


Transmission projects energized over the last decade in the Northwest were predominantly installed to **address reliability concerns**.

Wholesale market price differentials demonstrate a **high value of new interregional transmission** exists **between the Northwest and Mountain** regions.

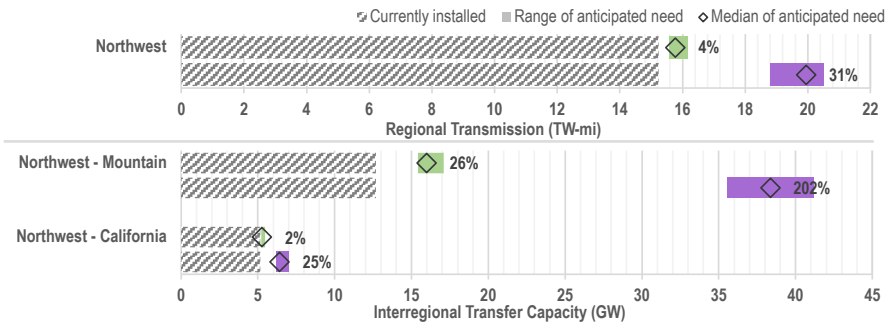
The average marginal value of transmission between the Northwest and the Mountain region from 2012–2020 is equal to $14/MWh.

Congestion value of hypothetical transmission links between select zonal nodes within and across regions.



Note: Wholesale market price data is limited for non-RTO/ISO regions. Absence of data does not necessarily indicate that there is no need for transmission to alleviate congestion and/or unscheduled flows in non-RTO/ISO regions. Findings organized using geographic region nomenclature as described in the Needs Study.
Source: D. Millstein, et al. (2022)

Within-region transmission and interregional transfer capacity need for Northwest in 2035
Range of new transmission need for future scenarios with moderate load and high clean energy growth (green, top for each region) and high load and high clean energy growth (purple, bottom). Median % growth compared to 2020 system shown.



Capacity expansion modeling results for the Moderate/High scenario group suggest an anticipated need of **0.5 TW-miles of new within-region transmission by 2035** (4% growth relative to 2020) and **3.3 GW of new interregional transfer capacity with the Mountain region by 2035** (26% growth relative to 2020).

Median 2035 capacity expansion modeling results for Moderate/High scenario group.

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